

PATENT CLAIMS

1. A device for hand-held measurement of distances (d) to a surface region of an object (1, 18, 22),
5 comprising
- a housing (2),
- a lens system (3) let into the housing (2) and intended for modulated transmitted beams (4) and for those beams (5) of the transmitted
10 beams (4) which are reflected by the surface region, for electro-optical distance measurement and
- a first component (6, 7, 8, 8', 8'', 9) which is connected to the housing (2) and can be
15 extended beyond the housing (2) in the direction of propagation of the transmitted beams (4) for determining short distances (d),
wherein
- the first component (6, 7, 8, 8', 8'', 9) is
20 formed both for measuring short distances, in particular between a zero point given by a measuring stop (20) of the housing (2) and the surface region, and as a spacer for electro-optical distance measurement and
25 - means for automatic determination of a distance dependent on the extension of the first component (6, 7, 8, 8', 8'', 9), both for distance measurement and for fixing the zero point for electro-optical measurement, are
30 provided.
2. The device as claimed in claim 1, wherein the means for automatic determination comprise
35 - optical or
- magnetic or
- acoustic or
- touch-sensitive or pressure-sensitive sensors.

3. The device as claimed in claim 1 or 2, wherein the device has at least one further component (8'''), optionally arranged orthogonally to the first component (8'') for measuring short distances.
4. The device as claimed in claim 3, wherein an apparatus, such as an optical, magnetic, acoustic or touch-sensitive or pressure-sensitive sensor, for automatic determination of the short distance is coordinated with the further component (8''').
5. The device as claimed in any of the preceding claims, wherein
- the first component (9) extends a predetermined fixed length (i) beyond the housing (2) for electro-optical measurement of short distances (d), and
 - in the predetermined extended state of the first component (9), the zero point of the measured, short distance (d) is embodied by that end of the first component (9) which faces away from the housing (2).
6. The device as claimed in claim 5, wherein an apparatus for registering the predetermined extended state of the first component (9) is provided.
7. The device as claimed in claim 5 or 6, wherein the first component (9) can be swiveled out or extended to the predetermined extended state, optionally with locking.
8. The device as claimed in any of claims 3 to 7, wherein
- a scale or

- a code
is coordinated with the first and/or further
component (6, 7, 8, 8', 8'', 8''', 9).

- 5 9. The device as claimed in any of claims 3 to 8,
 wherein the first and/or further component is in
 the form of one of the following alternatives:
 - elastically deformable, in the form of a strip,
 - as an elongated, substantially rigid body,
10 - arranged in a length measuring module
 detachably fastened to the housing (2), in
 particular via a receptacle.
- 15 10. The device as claimed in any of claims 3 to 9,
 wherein the guide of the first and/or further
 component (6, 7, 8, 8', 8'', 8''', 9) is formed in
 such a way that it is held in the extended
 position with frictional adhesion.
- 20 11. The device as claimed in any of claims 3 to 10,
 wherein the remote end of the first and/or further
 component (7, 8) is in the form of measuring hook
 (16), which is optionally displaceable by the
 material thickness of the measuring hook (16).
- 25 12. The device as claimed in any of claims 1 to 11,
 wherein a third scale (13) is arranged on the
 first component (6, 7, 9), the zero point of which
 third scale is embodied by that side of the
30 component (6, 7, 9) which faces away from the
 housing.
- 35 13. The device as claimed in any of claims 1 to 12,
 wherein at least one second scale (12) for
 measuring distances is arranged on the housing
 (2), the zero point of which second scale is
 embodied by the measuring stop (20).